Appendix B
Interim Measures Report—Salzburg Road Area

The Dow Chemical Company
Michigan Operations
Midland, Michigan 48667

November 29, 2001

Jim Sygo
Michigan Department of Environmental Quality
Waste Management Division
P.O. Box 30241
Lansing, Michigan 48909

Excavation and Backfilling of Salzburg Road Sample SSRR-S-10 Area Near Michigan Operations, MID 000 724 724
Interim Measure Report

This Interim Measure Report is submitted as per stipulation 2 of the MDEQ Interim Measure Approval letter for the Excavation and Backfilling of Salzburg Road Sample SSRR-S-10 Area Near The Dow Chemical Company (Dow) Michigan Operations, Midland Plant MID 000 724 724, dated September 24, 2001. The Interim Measure Approval required the following:

1. A confirmation sample must be taken from SSRR-S-10 location after the contaminated soil has been removed and prior to placement of clean cover and topsoil. The sample is to verify the condition of the site after remediation activities. The confirmation sample will be compared to the Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, generic industrial criteria for dioxins and furans.(Item 1 was modified from the original September 24 2001 Approval Letter per telephone conversation between Cheryl Howe, Al Taylor, MDEQ and Todd Konechne, Dow)

2. An Interim Measure Report summarizing the work completed (including, but not limited to, photo documentation, a description of the disposition of the excavated soils, copies of manifests for the soils, and verification sampling results) shall be submitted to the WMD (one copy to Ms. Cheryl Howe, Hazardous Waste Program Section , WMD, and one copy to Ms. Trisha Peters, WMD, Saginaw Bay District) within 30 days of completion. The Interim Measure Report must provide documentation that Dow owns the subject property, the property is zoned for industrial use, and the current and reasonably foreseeable future uses of the land will be consistent with the exposure assumptions used for the development of the Part 201 generic industrial direct contact criteria.

Background:

The impacted soil on Salzburg Road was identified in a 1998 soil sampling event (Dow 1998 Soil Sampling Report, MID 000 724 724). During the 1998 sampling event, soil samples were collected at various locations near the Dow Michigan Plant site. One soil sample, SSRR-S-10 indicated dioxin levels above Part 201 industrial criteria. The source or the cause of the soil impacts was and still is unknown.

Soil sample SSRR-S-10 is located on the south side of Salzburg Road, approximately 0.5 miles east of Waldo Road (0.5 miles west of Rockwell Drive). The sampling location was referenced using a global positioning devise (GPS) and also field marked using a 3-inch steel survey nail. The 1998 soil sampling result was verified by a supplemental soil sampling event that was conducted in April 2001 and the soil impacts were further delineated. The field sampling methodology was similar to the 1998 sampling event.

During the April 2001 supplemental soil sampling, four additional soil samples were collected near soil sample SSRR-S-10. Soil sample SSRR-S-10 (2001) was collected at the same location as SSRR-S-10 (1998) to verify the 1998 result. Soil sample SSRR-S-10A was collected 25 feet due south of SSRR-S-10, toward the existing tree line. Soil samples SSRR-S-10B and SSRR-S-10C were collected 25 feet due east and west of SSRR-S-10, respectively. Salzburg Road was considered the northern extent of impacted soil for delineation of this area. The results of the April 2001 supplemental sampling indicated that the extent of soils which were above applicable Part 201 industrial soil criteria was limited to locations near soil sample SSRR-S-10.

Description of Remedial Activities:

The remedial activities to address impacted soil at the referenced site included soil excavation and were completed per the Salzburg Road Excavation Specifications (dated August 28, 2001). The approximate area of excavation (see attached Figure) was 50 feet x 65 feet. The limit of excavation extended from the April 2001 soil sampling locations that were below applicable soil standards (SSRR-S-10A, SSRR-S-10B, and SSRR-S-10C) and Salzburg Road. Prior to conducting the field activities, a permit from the Midland County Road Commission was secured and Miss Dig was contacted to locate any utilities.

The soil was removed with an excavator to at least six inches below level surface. The work was executed in a manner that minimized dust and track out. Prior to commencing the excavation, water was applied to the excavation area with a water truck. The activity commenced near the northwest portion of the removal area (adjacent to Salzburg Road) and proceeded southeast. Truck traffic on exposed subgrade was avoided to eliminate track out. The removed topsoil was loaded directly into a tandem dump truck. Access to the excavation was provided by an access road located approximately 200 feet due east of the excavation area. The excavated soil was transported to Salzburg Landfill and disposed. Manifesting procedures were employed during the activities (Attachment 1). Approximately 100 cubic yards of soil were removed and disposed during the excavation activity.

After the excavation activities were completed, a post-excavation soil sample and duplicate were collected from the exposed subgrade soils, as per stipulation 1 of MDEQ's September 24, 2001 approval letter. The confirmation samples were collected in a manner similar to the previous sampling events. Fifteen core samples were collected from equal distances (fifteen-inch intervals) around the circumference of a six-foot diameter circle. Material was removed from the

surface of the excavated area using a spoon or similar device. The 15 samples were then homogenized and submitted for laboratory analysis. The soil samples were analyzed for the 17 International Toxicity Equivalence Factor dioxin and furan isomers, for calculation of total toxic equivalents, total tetra through octa dioxin and furan congener groups, according to US EPA Method 1613B. The dioxin and furan results of confirmation sample SSRR-S-10 (October 2001) and the duplicate sample were 51.9 ppt and 49.4 ppt, respectively. The post excavation soil confirmation sample was below applicable Part 201 industrial soil criteria.

After the confirmation sample was collected, the existing shoulder on Salzburg Road was reestablished with appropriate aggregate. Topsoil that consisted of the heavy, silty/clayey loam variety was tailgate dumped. The topsoil was spread from site boundaries inward. Topsoil was placed at a nominal 6-inch thickness. The topsoil was placed to conform to existing site drainage patterns including the flow line of the drainage swale adjacent to Salzburg Road. The disturbed area was fertilized, seeded and then protected by erosion control matting.

Pictures depicting the field activities are presented in Attachment 2.

A property description and boundary are included in Attachment 3. Dow owns the property adjacent to the road right-of-way. The property is zoned Industrial, IB (City of Midland Zoning Map, 11-20-2001). The closest activity is industrial; a trucking company operation is about ¼ mile west of this site. The nearest residential use is more than a half mile from this site, to the south.

Based on the confirmation sample results, Dow requests Generic Industrial Clean-Up status of this property. If you have any questions or require additional information, please contact me at (989) 638-1639.

Sincerely,

Todd Konechne

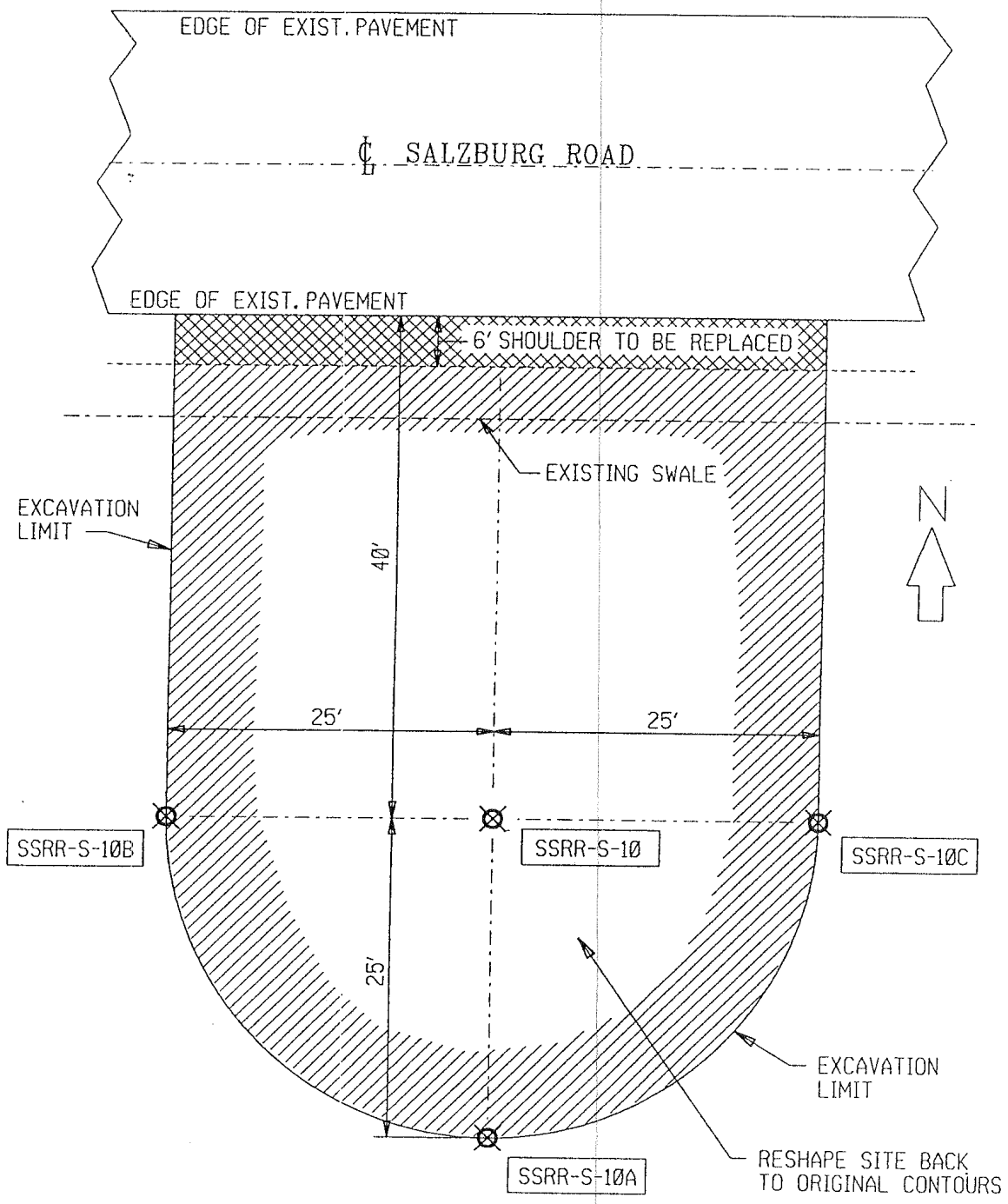
Todd Konechne
Remediation Leader
1100 Building
989-638-1639

cc: Cheryl Howe, WMD, Hazardous Waste Program Section
Trisha Peters, WMD, Saginaw Bay District
Karl Tomion, City of Midland
Charles Newell, Midland County Health Department
Jeff Feerer, Dow
Michelle Mizell, Dow

FIGURES

DIOXIN ANALYTICAL DATA - (ppt , TEQ)

LOCATION	1998	APRIL 2001	OCT. 2001
SSRR-S-10	2670	2370	50.6
SSRR-S-10A		105	
SSRR-S-10B		193	
SSRR-S-10C		58	



* SSRR-S-10 (OCT. 2001)
COLLECTED FROM EXPOSED SUBGRADE

\DUST\Scott.DGN

LEG/SM 11-29-01

ATTACHMENT 1

1SCS117758-000X205794

TREATMENT/DISPOSAL PERMIT

117758-000
ID NUMBER

205794

MATERIAL DESTINATION: X DOW LANDFILL MIDLAND CITY LANDFILL 1208 DEWATERING FACILITY

SHIPMENT DATE 10-9-01 BUILDING 1078 BUILD DOOR/SPOT

MATERIAL DESCRIPTION CONTAMINATED SOIL

09-10-01 P12:22 IN

CONTAINER TYPE/
DOW CONTAINER NUMBER Dump Truck

TOTAL
VOLUME (CU. YD.) 12

TRANSPORTER/
COMPANY NAME FISHER

TRANSPORTER
DRIVER'S SIGNATURE Mike Love

RELEASE APPROVAL

This material has been determined to be non-hazardous under the criteria established by State of Michigan regulations, and is approved for release to the above material destination.

R. A. Walker
Environmental Operations Approval

6-5247
Telephone Number

10/04/2001
Approval Date

Return unused/expired permits to Environmental Operation, 1078 Building.
This Permit expires one month from the Approval Date listed above.

RELEASE INSPECTION

This material has been inspected to assure that it is as described above, has not been mixed with other materials, and the special condition, if listed below, is fulfilled.

SPECIAL CONDITION: Cost Ctr: 00994070

Generator's Signature

517-636-4565
Telephone Number

FORM 67000 R-8/99

REFER TO REVERSE SIDE OF PERMIT FOR INSTRUCTIONS

ENVIRONMENTAL OPERATIONS COPY

1SCS117758-000X205795

TREATMENT/DISPOSAL PERMIT

117758-000
ID NUMBER

205795

MATERIAL DESTINATION: X DOW LANDFILL MIDLAND CITY LANDFILL 1208 DEWATERING FACILITY

SHIPMENT DATE 10.09.01 BUILDING 1078 BUILD DOOR/SPOT

MATERIAL DESCRIPTION CONTAMINATED SOIL

09-10-01 P12:22 IN

CONTAINER TYPE/
DOW CONTAINER NUMBER Dump Truck

TOTAL
VOLUME (CU. YD.) 12

TRANSPORTER/
COMPANY NAME FISHER

TRANSPORTER
DRIVER'S SIGNATURE K Burdett Jr Ford

RELEASE APPROVAL

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SPECIAL CONDITION: Cost Ctr: 00994070

Generator's Signature

517-636-4565

1SCS117758-000X205790

TREATMENT/DISPOSAL PERMIT

117758-000
ID NUMBER

205790

X

MATERIAL DESTINATION: DOW LANDFILL MIDLAND CITY LANDFILL 1208 DEWATERING FACILITY

SHIPMENT DATE 10-9-01 BUILDING 1078 BUILD DOOR/SPOT

MATERIAL DESCRIPTION CONTAMINATED SOIL

09-10-01 P12:22 IN

CONTAINER TYPE/
DOW CONTAINER NUMBER Dump Truck

TOTAL
VOLUME (CU. YD.) 12

TRANSPORTER/
COMPANY NAME FISHER

TRANSPORTER
DRIVER'S SIGNATURE Mike Love

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Generator's Signature

517-636-4565
Telephone Number

FORM 67000 R-8/99

REFER TO REVERSE SIDE OF PERMIT FOR INSTRUCTIONS

ENVIRONMENTAL OPERATIONS COPY

1SCS117758-000X205791

TREATMENT/DISPOSAL PERMIT

117758-000
ID NUMBER

205791

X

MATERIAL DESTINATION: DOW LANDFILL MIDLAND CITY LANDFILL 1208 DEWATERING FACILITY

SHIPMENT DATE 10-9-01 BUILDING 1078 BUILD DOOR/SPOT

MATERIAL DESCRIPTION CONTAMINATED SOIL

09-10-01 P12:21 IN

CONTAINER TYPE/
DOW CONTAINER NUMBER Dump Truck

TOTAL
VOLUME (CU. YD.) 12

TRANSPORTER/
COMPANY NAME FISHER

TRANSPORTER
DRIVER'S SIGNATURE Mike Love

RELEASE APPROVAL

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R. A. Walker
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Telephone Number

10/04/2001
Approval Date

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SPECIAL CONDITION: Cost Ctr: 00994070

Generator's Signature

517-636-4565
Telephone Number

1SCS117758-000X205796

TREATMENT/DISPOSAL PERMIT

117758-000 ID NUMBER

205796

MATERIAL DESTINATION: X DOW LANDFILL MIDLAND CITY LANDFILL 1208 DEWATERING FACILITY

SHIPMENT DATE 10·09·01 BUILDING 1078 BUILD DOOR/SPOT

MATERIAL DESCRIPTION CONTAMINATED SOIL

09-10-01 12:22 IN

CONTAINER TYPE/
DOW CONTAINER NUMBER Dump Truck

TOTAL
VOLUME (CU. YD.) 12

TRANSPORTER/
COMPANY NAME FISHER

TRANSPORTER
DRIVER'S SIGNATURE

RELEASE APPROVAL

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6-5247
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10/04/2001
Approval Date

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Generator's Signature

517-636-4565
Telephone Number

FORM 67000 R-8/99

REFER TO REVERSE SIDE OF PERMIT FOR INSTRUCTIONS
ENVIRONMENTAL OPERATIONS COPY

1SCS117758-000X205797

TREATMENT/DISPOSAL PERMIT

117758-000 ID NUMBER

205797

MATERIAL DESTINATION: X DOW LANDFILL MIDLAND CITY LANDFILL 1208 DEWATERING FACILITY

SHIPMENT DATE 10·09·01 BUILDING 1078 BUILD DOOR/SPOT

MATERIAL DESCRIPTION CONTAMINATED SOIL

CONTAINER TYPE/
DOW CONTAINER NUMBER Dump Truck

TOTAL
VOLUME (CU. YD.) 12

TRANSPORTER/
COMPANY NAME FISHER

TRANSPORTER
DRIVER'S SIGNATURE

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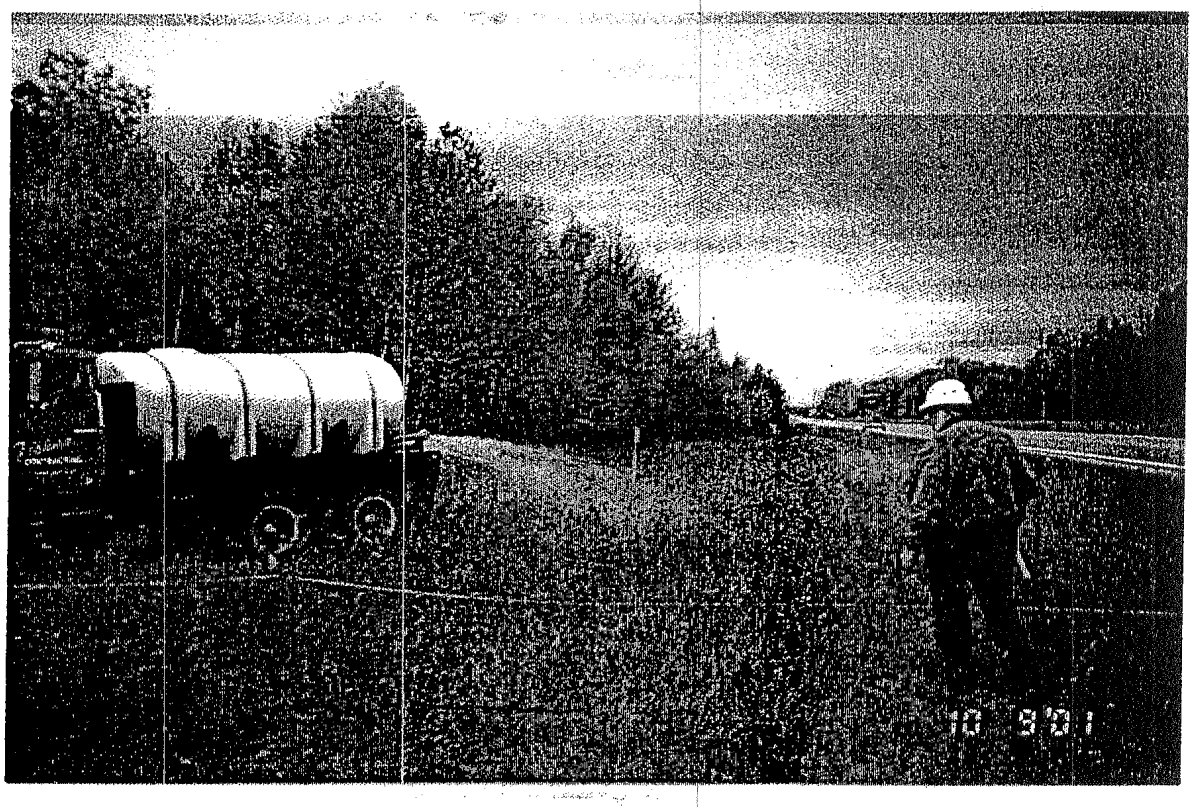
Generator's Signature

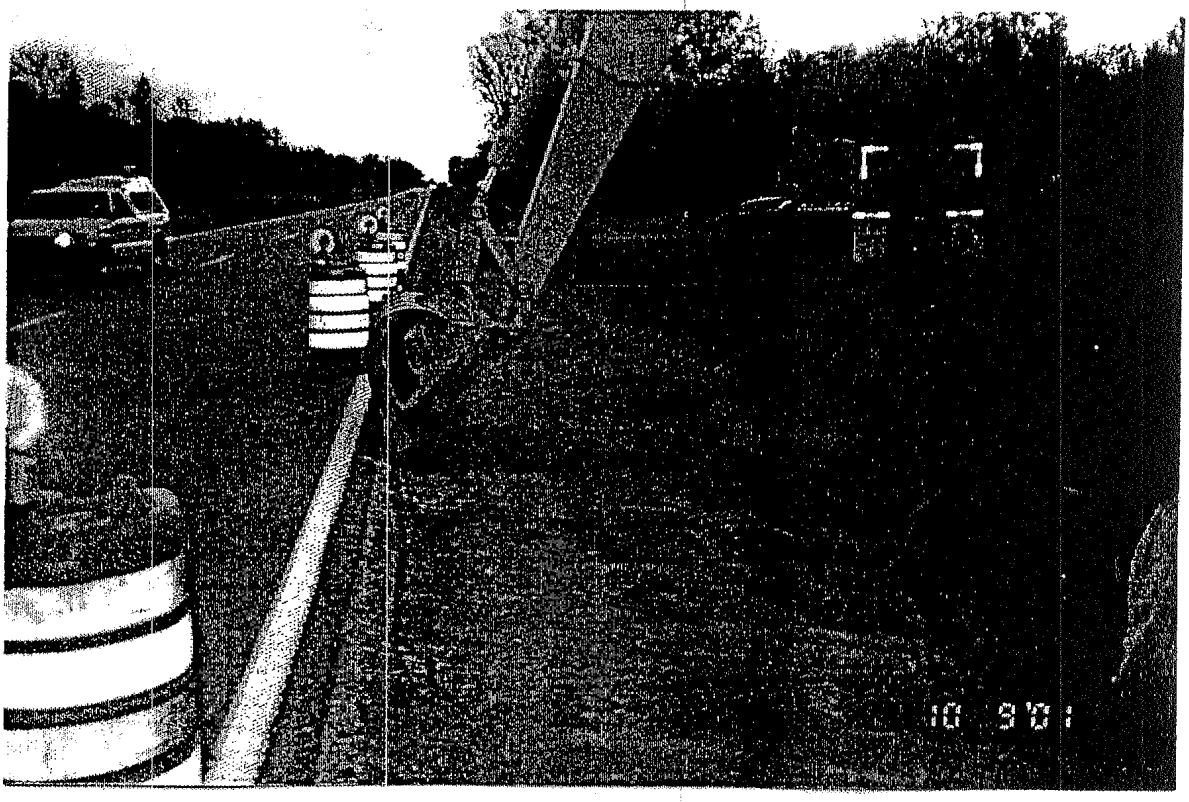
517-636-4565

ATTACHMENT 2

Salzburg Road Project



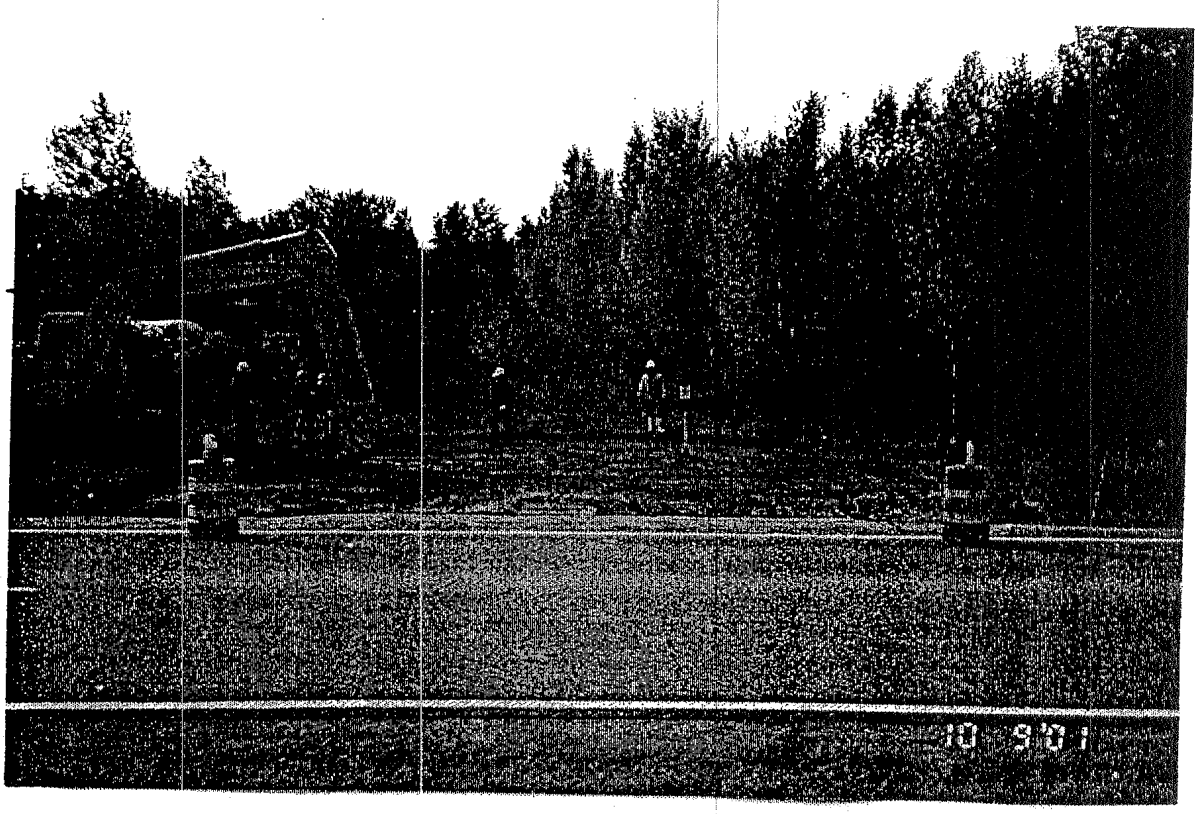
Preparing the Excavation Area



Excavation Adjacent to Salzburg Road

Salzburg Road Project

Completing Excavation



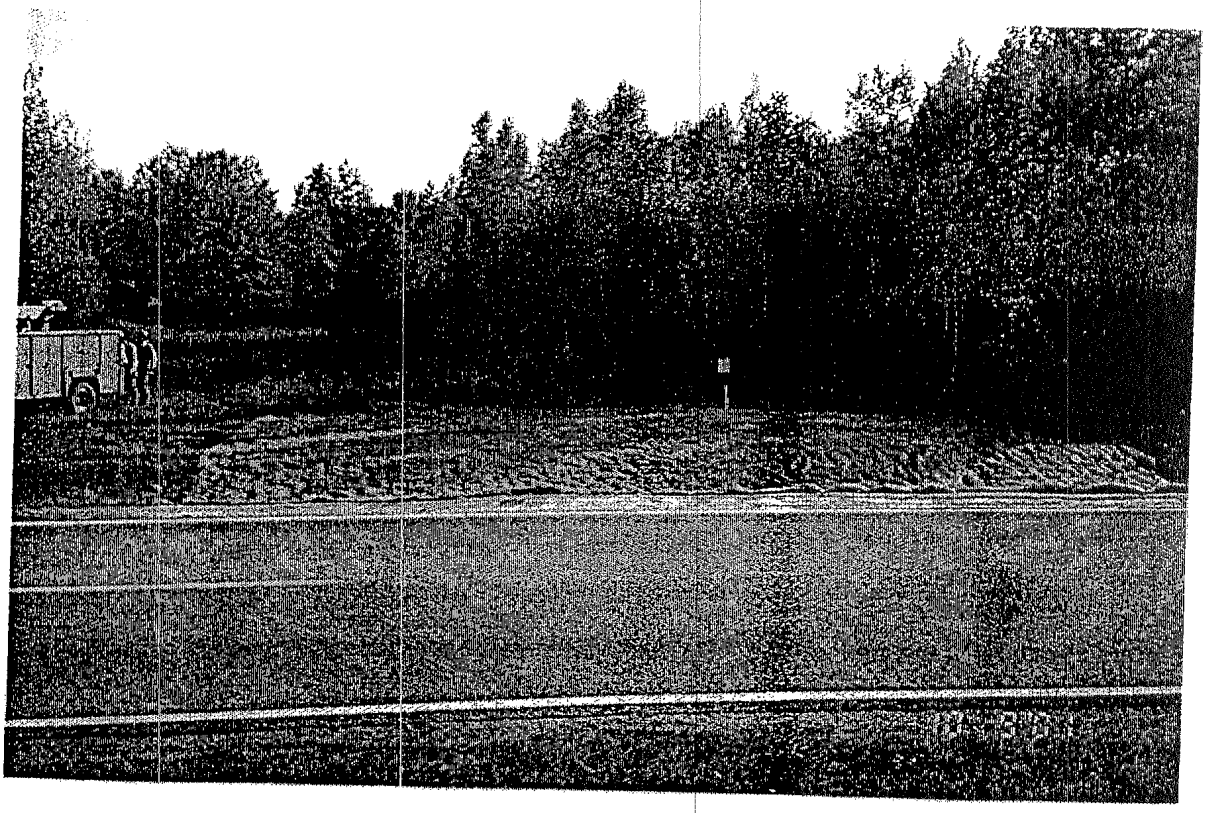
Completing Excavation, Looking South

Salzburg Road Project

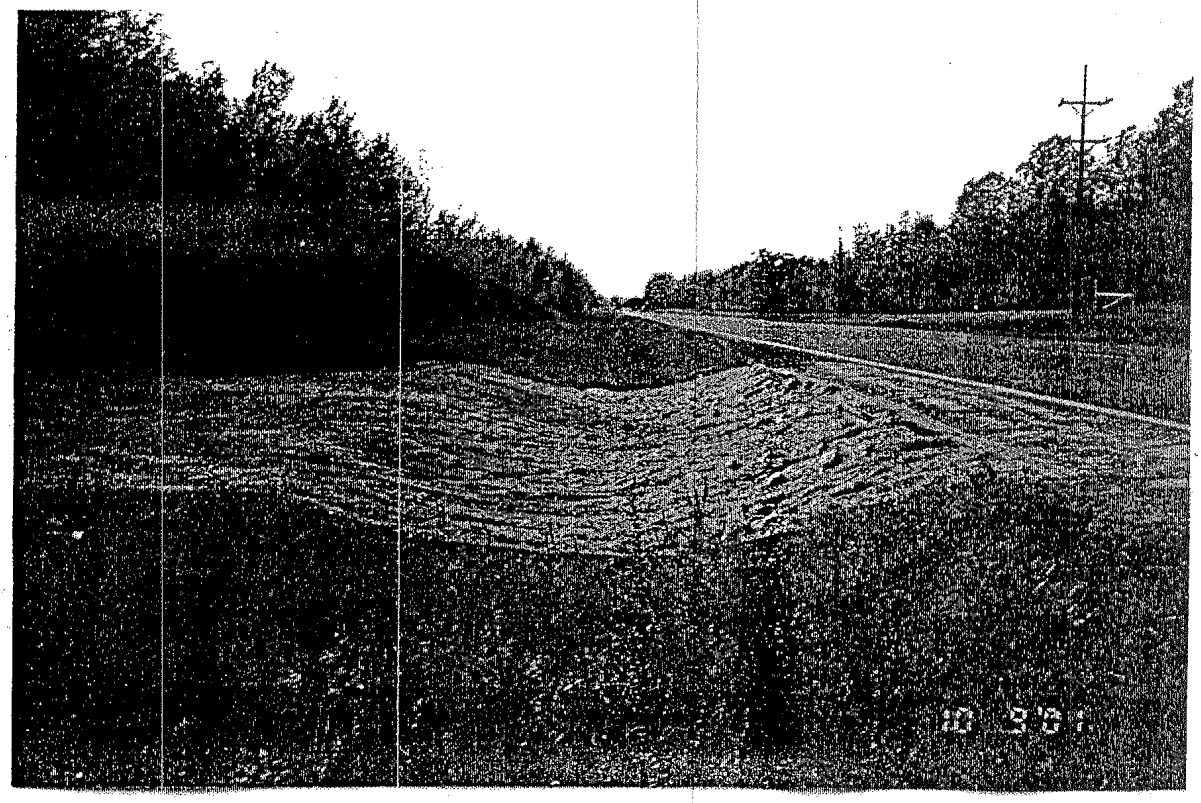
Post Excavation Sampling

Post Excavation Sampling

Salzburg Road Project



Completed Excavation, Looking South



Completed Excavation, Looking West

ATTACHMENT 3

RECORDED

561236

MAY 2 1 50 PM '89

RICHARD O. DIMENT
REGISTER OF DEEDS
MIDLAND COUNTY, MICH

WITNESS:

N 50° E — ℄ OF BELL CABLE M.H. 68.21'

S 10° W — ℄ OF STEM ON VALVE WHEEL, BRINE LINE 49.12'

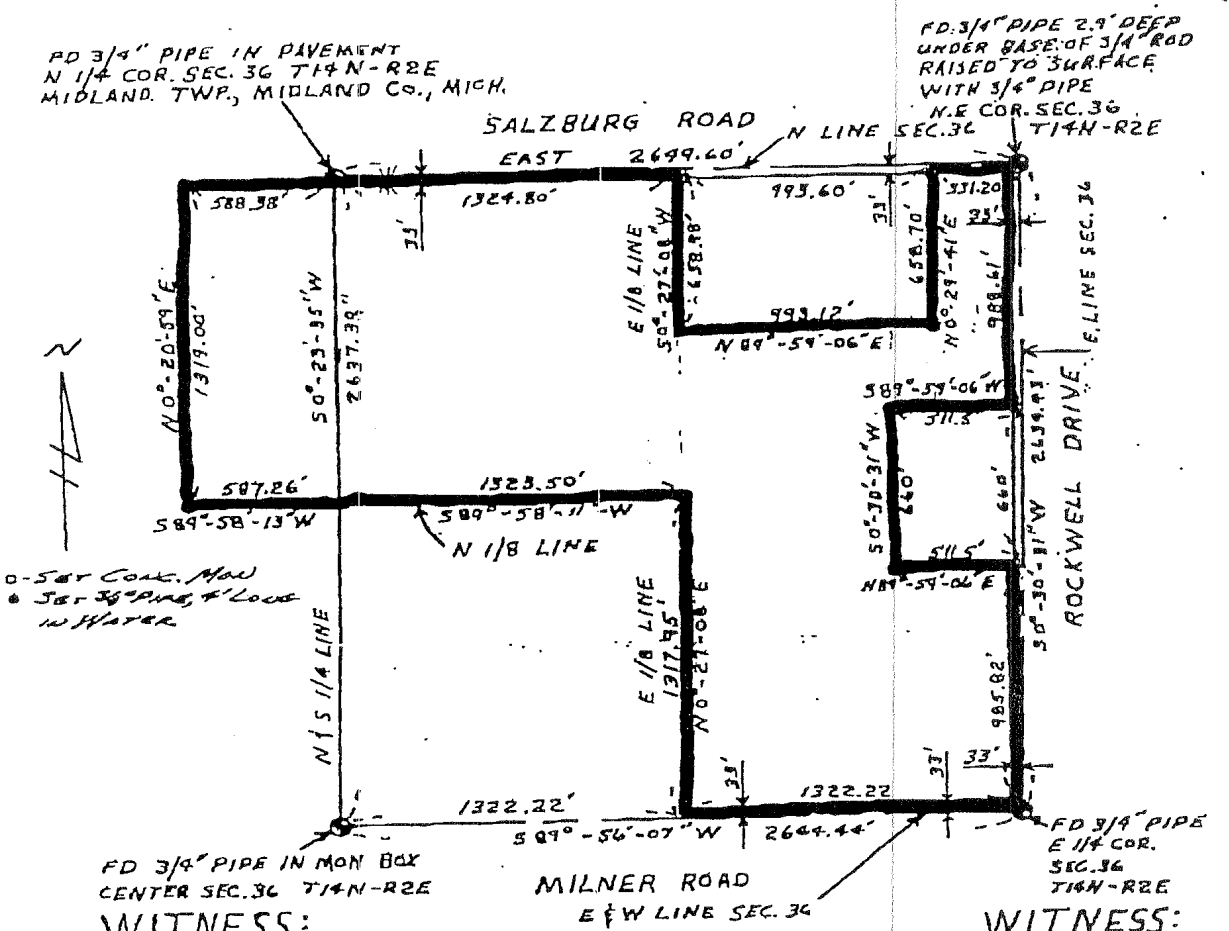
0.85' N OF ℄ PAVEMENT

WITNESS:

N 50° E — P.K. NAIL IN N.W. FACE OF POWER POLE 59.81'

S 35° E — NAIL & TAG IN 8" SPRUCE 91.08'

S 45° W — ℄ N.E. BOLT ON FLANGE ON TOP VALVE, B.L. 70.58'



O - Set Conc. Mon
● Set 3/4" Pipe, 4' Long in Water

WITNESS:

N 60° W — NAIL & TAG IN 8" POPLAR 67.46'

S 45° W — ℄ OF ROAD NAME SIGN 41.12'

N 10° E — NAIL & TAG IN 9" POPLAR 53.41'

1' N. OF ℄ OF PAVEMENT W. AND 0.5' W. OF ℄ PAVEMENT S.

S 40° E. — NAIL & TAG IN 8" BOX ELDER 52.98'

EAST 9.25', 3/4" ROD USED MON. BOX AS COR. SEC. AS HAS BEEN OCCUPIED CORNER

WITNESS:

S 45° E — ℄ OF LOWER HINGE BOLT ON GATE POST 65.27'

S 45° W — NAIL & TAG IN E SIDE OF TWIN 12" MAPLE — 103.61'

N 45° W — ℄ OF 3" PIPE, STANDING 4.5' HIG. 51.07'

SURVEY FOR

Dow Chemical Company
Midland, Michigan 48640

OWEN AYRES & ASSOCIATES INC
ENGINEERS AND SURVEYORS
3773 E. WACKERLY ROAD
MIDLAND, MICHIGAN 48640
(517) 839-9611

Scale: 1" = 600'	Drn. By: TRS	Job No. 3213.00
Date: 4/23/89	Ck'd. By: WCJ	Sheet 1 Of 2

SURVEY FOR: THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

SURVEY OF: PART OF THE NORTHEAST 1/4, NORTHWEST 1/4 AND PART OF THE NORTHEAST 1/4, SECTION 36, T14N-R2E, MIDLAND TOWNSHIP, MIDLAND COUNTY, MICHIGAN DESCIRBED AS BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION 36; THENCE S 00 DEG 30 MIN 31 SEC W, 988.61 FT. ALONG THE EAST SECTION LINE; THENCE S 89 DEG 59 MIN 06 SEC W, 511.50 FT.; THENCE S 00 DEG 30 MIN 31 SEC W, 660 FT.; THENCE N 89 DEG 59 MIN 06 SEC E, 511.50 FT.; THENCE S 00 DEG 30 MIN 31 SEC W, 985.82 FT. ALONG SAID EAST SECTION LINE TO THE EAST 1/4 CORNER; THENCE S 89 DEG 56 MIN 07 SEC W, 1322.22 FT. ALONG THE EAST AND WEST 1/4 LINE; THENCE N 00 DEG 27 MIN 06 SEC E, 1317.95 FT. ALONG THE EAST 1/8th LINE; THENCE S 89 DEG 58 MIN 11 SEC W, 1323.50 FT. ALONG THE NORTH 1/8th LINE TO THE NORTH AND SOUTH 1/4 LINE; THENCE S 89 DEG 58 MIN 13 SEC W, 587.26 FT. ALONG THE NORTH 1/8th LINE; THENCE N 00 DEG 29 MIN 59 SEC E, 1319.00 FT. ALONG A LINE PARALLEL TO THE WEST 1/8th LINE TO A POINT WHICH IS EAST, 2060.26 FT. FROM THE NORTHWEST CORNER OF SAID SECTION 36; THENCE EAST, 588.38 FT. ALONG THE NORTH SECTION TO THE NORTH 1/4 CORNER OF SECTION 36; THENCE EAST, 1324.80 FT. ALONG SAID NORTH SECTION LINE; THENCE S 00 DEG 27 MIN 08 SEC W, 658.98 FT. ALONG THE EAST 1/8th LINE; THENCE N 89 DEG 59 MIN 06 SEC E, 993.12 FT. ALONG THE SOUTH LINE OF THE NORTH 1/2, NORTHEAST 1/4, NORTHEAST 1/4; THENCE N 00 DEG 29 IN 41 SEC E, 658.70 FT.; THENCE EAST 331.20 FT. ALONG THE NORTH SECTION LINE TO THE POINT OF BEGINNING. CONTAINING 115.16 ACRES, AND SUBJECT TO SALZBURG RD., ROCKWELL DR., AND MILNER RD. RIGHT OF WAYS, AND ANY EASEMENTS OF RECORD.

I, JERRY L. JONES, HEREBY CERTIFY THAT I HAVE SURVEYED AND MAPPED THE LAND ABOVE PLATTED AND DESCRIBED ON APRIL 23, 1984, AND THAT THE RATIO OF CLOSURE ON THE UNADJUSTED FIELD OBSERVATIONS OF SUCH SURVEY WAS 1/10,000, OR GREATER, AND THAT ALL OF THE REQUIREMENTS P.A. 132 OF 1970 HAVE BEEN COMPLIED WITH.

Jerry L Jones
JERRY L. JONES, LS 19838

STATE OF MICHIGAN
JERRY L. JONES
LAND SURVEYOR
No. 19838
REGISTERED LAND SURVEYOR

SURVEY FOR

The Dow Chemical Company
Midland, Michigan 48640

OWEN AYRES & ASSOCIATES INC
ENGINEERS AND SURVEYORS
3775 E. WACKERLY ROAD
MIDLAND, MICHIGAN 48640
(517) 839-9611

Scale: 1"=60'	Drn. By: TS	Job No. 3213.00
Date: 4-24-8	Ck'd. By: JLJ	Sheet 2 Of 2

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us

RUSSELL J. HARDING, Director

REPLY TO:

WASTE MANAGEMENT DIVISION
PO BOX 30241
LANSING MI 48909-7741

September 24, 2001

Mr. Todd Konechne, Remediation Leader
Environmental Operations
The Dow Chemical Company
1100 Building
Midland, Michigan 48667

Dear Mr. Konechne:

SUBJECT: Approval of Interim Measure
Excavation and Backfilling of Salzburg Road Sample SSRR-10 Area
Near The Dow Chemical Company (Dow) Michigan Operations, Midland Plant
MID 000 724 724

Staff of the Michigan Department of Environmental Quality (MDEQ), Waste Management Division (WMD), have completed a review of the draft Salzburg Road Excavation Specifications (Specifications) dated August 28, 2001. The work described in the Specifications involves excavation of dioxin/furan contaminated soils to a depth of 0.5-foot in a diameter of about 50 feet around soil sampling location SSRR-10, adjacent to Salzburg Road and about ¾ mile east of Waldo Road, backfilling the area with clean topsoil/gravel and reestablishing vegetation. The removed soil is to be disposed of in the Dow Salzburg Road Landfill. The work is to be conducted within the public right of way of property owned by Dow during the week of September 24, 2001.

This work is considered a corrective action interim measure by the WMD and is hereby approved with the stipulations for approval listed below:

1. A confirmation sample must be taken from the SSRR-10 location after the contaminated soil has been removed to verify that levels of contamination have been reduced to below the Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, generic industrial criteria for dioxins and furans.

2. An Interim Measure Report summarizing the work completed (including, but not limited to, photo documentation, a description of the disposition of the excavated soils, copies of manifests for the soils, and verification sampling results) shall be submitted to the WMD (one copy to Ms. Cheryl Howe, Hazardous Waste Program Section, WMD, and one copy to Ms. Trisha Peters, WMD, Saginaw Bay District) within 30 days of completion. The Interim Measure Report must provide documentation that Dow owns the subject property, the property is zoned for industrial use, and the current and reasonably foreseeable future uses

of the land will be consistent with the exposure assumptions used for the development of the Part 201 generic industrial direct contact criteria.

For your information, the WMD's analytical results from the April 11, 2001 split sampling of this area are provided on the enclosed copy of the sample location/excavation diagram that you submitted on August 28, 2001. The spreadsheet for this data is also enclosed.

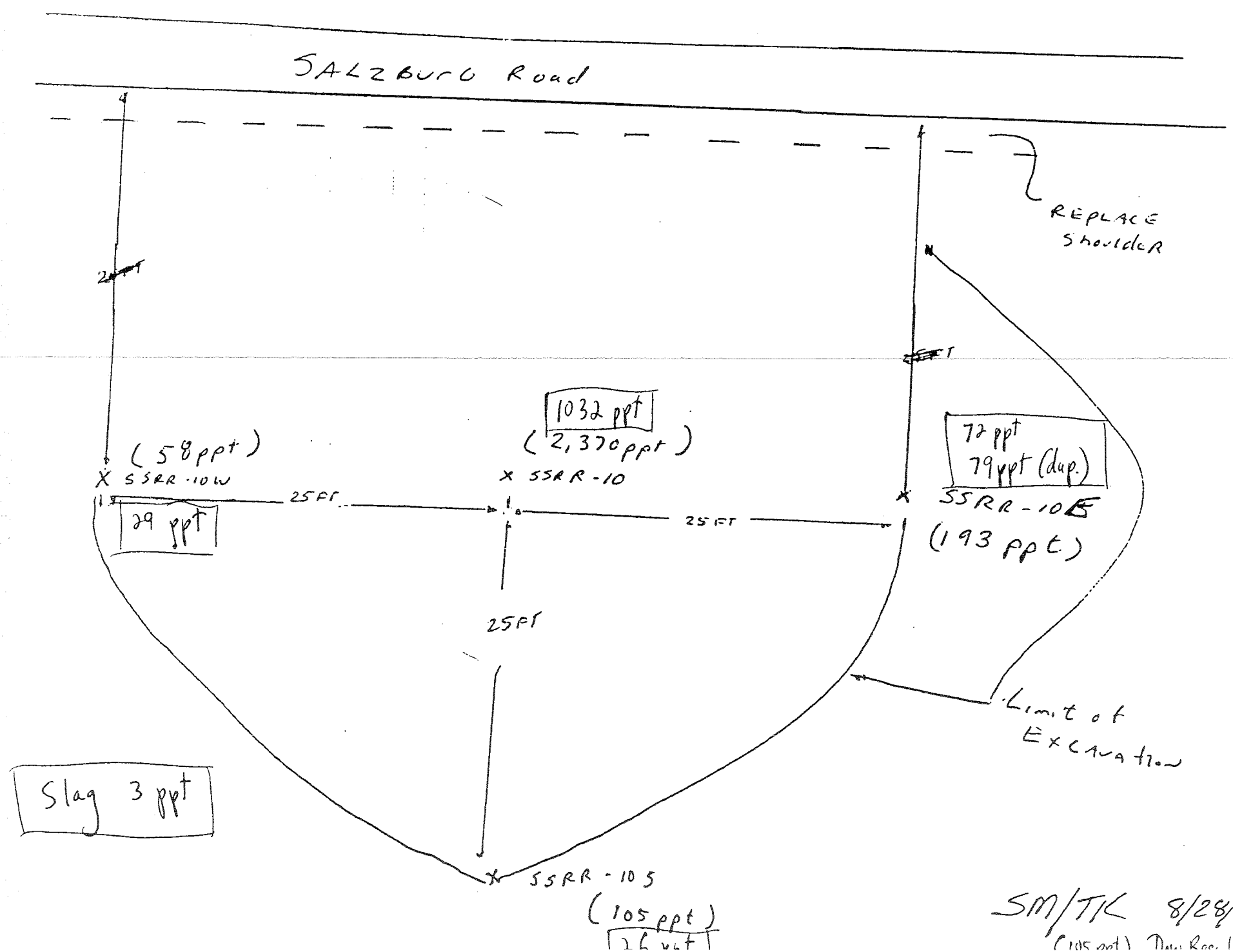
Please contact Ms. Howe, at 517-373-9881, if you have any questions regarding this approval, or you may contact me.

Sincerely,

Jim Sygo, Chief
Waste Management Division
517-373-9523

Enclosures

cc/enc: Dr. Jeffrey Feerer, Dow
Mr. Karl Tomion, City of Midland
Mr. Charles Newell, Midland County Health Department
Mr. Greg Rudloff, U.S. Environmental Protection Agency
Mr. Arthur R. Nash Jr., Deputy Director, MDEQ
Mr. Ken Burda, MDEQ/Corrective Action File
Mr. John Craig/Mr. Gary Tuma, MDEQ
Mr. Steve Buda, MDEQ
Ms. De Montgomery/Mr. Allan Taylor, MDEQ
Mr. Ed Haapala/Ms. Trisha Peters, MDEQ - Saginaw Bay
Ms. Cheryl Howe, MDEQ


SALZBURG Road
REPLACE Shoulder
25FT
(58ppt)
X SSRR-10W
29 ppt
25FT
1032 ppt
(2,370ppt)
X SSRR-10
25FT
25FT
72 ppt
79ppt (dup.)
SSRR-10E
(193 ppt)
Limit of Excavation
Slag 3 ppt
SSRR-10S
(105 ppt)
SM/TK 8/28/01

SSRR-10 REMEDIATION

Analyte	TEF		SS RR-S-10 *Project 53786* sampled (pg/g)	toxic eq. (ug/kg)	nondetect 1/2 d.l.	nondetect zero		SS RR-S-10-E(1) *Project 53786* sampled (pg/g)	toxic eq. (ug/kg)	nondetect 1/2 d.l.	nondetect zero		SS RR-S-10-E(2) *Project 53786* sampled (pg/g)	toxic eq. (ug/kg)	nondetect 1/2 d.l.	nondetect zero
2378-TCDD	1		11.7	0.0117	0.0117	0.0117		2.4	0.0024	0.0024	0.0024		2.8	0.0028	0.0028	0.0028
12378-PeCDD	0.5		173.0	0.0865	0.0865	0.0865		14.0	0.0070	0.0070	0.0070		14.6	0.0073	0.0073	0.0073
123478-HxCDD	0.1		464.0	0.0464	0.0464	0.0464		29.4	0.0029	0.0029	0.0029		29.4	0.0029	0.0029	0.0029
123678-HxCDD	0.1		1600.0	0.1600	0.1600	0.1600		69.6	0.0070	0.0070	0.0070		80.3	0.0080	0.0080	0.0080
123789-HxCDD	0.1		1020.0	0.1020	0.1020	0.1020		65.6	0.0066	0.0066	0.0066		72.5	0.0073	0.0073	0.0073
1234678-HpCDD	0.01	S,E	29070.0	0.2907	0.2907	0.2907	E	2010.0	0.0201	0.0201	0.0201	E	2270.0	0.0227	0.0227	0.0227
12346789-OCDD	0.001	Q,E	79230.0	0.0792	0.0792	0.0792	E	12460.0	0.0125	0.0125	0.0125	E	13890.0	0.0139	0.0139	0.0139
2378TCDF	0.1		4.2	0.0004	0.0004	0.0004		1.6	0.0002	0.0002	0.0002		1.8	0.0002	0.0002	0.0002
12378-PeCDF	0.05	ND	0.2	0.0000	0.0000	0.0000	J	3.3	0.0002	0.0002	0.0002	J	2.7	0.0001	0.0001	0.0001
23478-PeCDF	0.5		31.7	0.0159	0.0159	0.0159	J	3.8	0.0019	0.0019	0.0019	J	3.6	0.0018	0.0018	0.0018
123478-HxCDF	0.1		495.0	0.0495	0.0495	0.0495		25.4	0.0025	0.0025	0.0025		26.9	0.0027	0.0027	0.0027
123678-HxCDF	0.1		269.0	0.0269	0.0269	0.0269		17.9	0.0018	0.0018	0.0018		18.9	0.0019	0.0019	0.0019
234678-HxCDF	0.1		427.0	0.0427	0.0427	0.0427		23.3	0.0023	0.0023	0.0023		24.6	0.0025	0.0025	0.0025
123789-HxCDF	0.1	ND	0.2	0.0000	0.0000	0.0000	ND	0.1	0.0000	0.0000	0.0000	ND	0.2	0.0000	0.0000	0.0000
1234678-HpCDF	0.01	E	8570.0	0.0857	0.0857	0.0857		367.0	0.0037	0.0037	0.0037		415.0	0.0042	0.0042	0.0042
1234789-HpCDF	0.01		595.0	0.0060	0.0060	0.0060		24.0	0.0002	0.0002	0.0002		24.4	0.0002	0.0002	0.0002
12346789-OCDF	0.001	Q,E	28190.0	0.0282	0.0282	0.0282		506.0	0.0005	0.0005	0.0005		573.0	0.0006	0.0006	0.0006
nondetects = detection limit			TEQ =	1.0318				TEQ =	0.0717				TEQ =	0.0791		
nondetects = 1/2 d.l.			*teq =*		1.0318			*teq =*		0.0717			*teq =*		0.0790	
nondetects = zero			teq =			1.0317		teq =			0.0717		teq =			0.0790
			(pg/g)	(ug/kg)				(pg/g)	(ug/kg)				(pg/g)	(ug/kg)		
TOTAL TCDD			94	0.0938				28	0.0280				48	0.0478		
TOTAL PeCDD			818	0.8180				93.5	0.0935				107	0.1070		
TOTAL HxCDD			8450	8.4500				560	0.5600				617	0.6170		
TOTAL HpCDD		S,E	51130	51.1300			E	3510	3.5100			E	3950	3.9500		
TOTAL TCDF		X	610	0.6100			X	177	0.1770			X	234	0.2340		
TOTAL PeCDF		X	2990	2.9900			X	238	0.2380			X	291	0.2910		
TOTAL HxCDF		X,E	18410	18.4100			X	612	0.6120			X	727	0.7270		
TOTAL HpCDF		S,X,E	31610	31.6100				1140	1.1400			X	1360	1.3600		

SSRR-10 REMEDIATION															
			SS RR-S-10-S				SS RR-S-10-W					SSRR-10 SLAG			
			Project 53786				*Project 53786*					*Project 53877Br2*			
Analyte		sampled	toxic eq.	nondetect	nondetect		sampled	toxic eq.	nondetect	nondetect		sampled	toxic eq.	nondetect	nondetect
		(pg/g)	(ug/kg)	1/2 d.l.	zero		(pg/g)	(ug/kg)	1/2 d.l.	zero		(pg/g)	(ug/kg)	1/2 d.l.	zero
2378-TCDD		8.90	0.0089	0.0089	0.0089		3.70	0.0037	0.0037	0.0037	ND	1.00	0.0010	0.0005	0.0000
12378-PeCDD		6.40	0.0032	0.0032	0.0032		6.10	0.0031	0.0031	0.0031	ND	1.20	0.0006	0.0003	0.0000
123478-HxCDD		7.30	0.0007	0.0007	0.0007		6.60	0.0007	0.0007	0.0007	ND	1.30	0.0001	0.0001	0.0000
123678-HxCDD		15.30	0.0015	0.0015	0.0015		15.70	0.0016	0.0016	0.0016	ND	1.20	0.0001	0.0001	0.0000
123789-HxCDD		13.20	0.0013	0.0013	0.0013		14.40	0.0014	0.0014	0.0014	ND	1.20	0.0001	0.0001	0.0000
1234678-HpCDD		230.00	0.0023	0.0023	0.0023		384.00	0.0038	0.0038	0.0038	ND	1.60	0.0000	0.0000	0.0000
12346789-OCDD		2730.00	0.0027	0.0027	0.0027		2710.00	0.0027	0.0027	0.0027	B	14.90	0.0000	0.0000	0.0000
2378TCDF		2.70	0.0003	0.0003	0.0003		1.70	0.0002	0.0002	0.0002	ND	0.70	0.0001	0.0000	0.0000
12378-PeCDF	ND	0.10	0.0000	0.0000	0.0000	ND	0.10	0.0000	0.0000	0.0000	ND	0.80	0.0000	0.0000	0.0000
23478-PeCDF	J	2.70	0.0014	0.0014	0.0014	J	1.90	0.0010	0.0010	0.0010	ND	0.80	0.0004	0.0002	0.0000
123478-HxCDF		8.70	0.0009	0.0009	0.0009		6.30	0.0006	0.0006	0.0006	ND	0.80	0.0001	0.0000	0.0000
123678-HxCDF	J	4.20	0.0004	0.0004	0.0004	J	3.40	0.0003	0.0003	0.0003	ND	0.70	0.0001	0.0000	0.0000
234678-HxCDF		5.40	0.0005	0.0005	0.0005		5.20	0.0005	0.0005	0.0005	ND	0.80	0.0001	0.0000	0.0000
123789-HxCDF	ND	0.20	0.0000	0.0000	0.0000	ND	0.20	0.0000	0.0000	0.0000	ND	1.00	0.0001	0.0001	0.0000
1234678-HpCDF		124.00	0.0012	0.0012	0.0012		109.00	0.0011	0.0011	0.0011	ND	1.20	0.0000	0.0000	0.0000
1234789-HpCDF	ND	5.20	0.0001	0.0000	0.0000		5.40	0.0001	0.0001	0.0001	ND	1.50	0.0000	0.0000	0.0000
12346789-OCDF		216.00	0.0002	0.0002	0.0002		207.00	0.0002	0.0002	0.0002	J,B	2.20	0.0000	0.0000	0.0000
nondetects = detection limit		TEQ =	0.0257				TEQ =	0.0210				TEQ =	0.0029		
nondetects = 1/2 d.l.		*teq =*		0.0257			*teq =*		0.0209			*teq =*		0.0014	
nondetects = zero		teq =			0.0256		teq =			0.0209		teq =			0.0000
		(pg/g)	(ug/kg)				(pg/g)	(ug/kg)				(pg/g)	(ug/kg)		
TOTAL TCDD		57.2	0.0572				39.5	0.0395				1.0	0.0010		
TOTAL PeCDD		37.8	0.0378				41.7	0.0417			ND	1.2	0.0012		
TOTAL HxCDD		132.0	0.1320				131.0	0.1310			ND	1.2	0.0012		
TOTAL HpCDD		618.0	0.6180				714.0	0.7140			ND	1.6	0.0016		
TOTAL TCDF	X	252.0	0.2520			X	157.0	0.1570				8.9	0.0089		
TOTAL PeCDF	X	145.0	0.1450			X	107.0	0.1070			ND	1.9	0.0019		
TOTAL HxCDF	X	152.0	0.1520			X	147.0	0.1470			ND	4.4	0.0044		
TOTAL HpCDF		316.0	0.3160			X	357.0	0.3570			ND	1.3	0.0013		

SSRR-10 REMEDIATION					
			FIELD BLANK		
			Project 53877Br2		
Analyte		sampled	toxic eq.	nondetect	nondetect
		(pg/g)	(ug/kg)	1/2 d.l.	zero
2378-TCDD	ND	0.30	0.0003	0.0002	0.0000
12378-PeCDD	ND	0.30	0.0002	0.0001	0.0000
123478-HxCDD	ND	0.40	0.0000	0.0000	0.0000
123678-HxCDD	ND	0.30	0.0000	0.0000	0.0000
123789-HxCDD	ND	0.30	0.0000	0.0000	0.0000
1234678-HpCDD	J	1.90	0.0000	0.0000	0.0000
12346789-OCDD	B	11.70	0.0000	0.0000	0.0000
2378TCDF	ND	0.20	0.0000	0.0000	0.0000
12378-PeCDF	ND	0.20	0.0000	0.0000	0.0000
23478-PeCDF	ND	0.20	0.0001	0.0001	0.0000
123478-HxCDF	J	0.54	0.0001	0.0001	0.0001
123678-HxCDF	ND	0.20	0.0000	0.0000	0.0000
234678-HxCDF	ND	0.20	0.0000	0.0000	0.0000
123789-HxCDF	ND	0.20	0.0000	0.0000	0.0000
1234678-HpCDF	ND,J	0.80	0.0000	0.0000	0.0000
1234789-HpCDF	ND	0.30	0.0000	0.0000	0.0000
12346789-OCDF	ND,J	2.00	0.0000	0.0000	0.0000
nondetects = detection limit		TEQ =	0.0008		
nondetects = 1/2 d.l.		*teq =*		0.0005	
nondetects = zero		teq =			0.0001
		(pg/g)	(ug/kg)		
TOTAL TCDD	ND	0.3	0.0003		
TOTAL PeCDD	ND	0.3	0.0003		
TOTAL HxCDD	ND	0.8	0.0008		
TOTAL HpCDD		3.2	0.0032		
TOTAL TCDF	ND	0.2	0.0002		
TOTAL PeCDF		0.7	0.0007		
TOTAL HxCDF		0.5	0.0005		
TOTAL HpCDF		1.2	0.0012		

DATA FLAGS

In order to assist with data interpretation, data qualifier flags are used on the final reports. The most commonly used flags are:

ND = analyte not detected. Value is the detection limit.

B = analyte has been detected in the laboratory method blank as well as in an associated field sample.

E = indicates a concentration based on an analyte to internal standard ratio which exceeds the range of the calibration curve. Values which are outside the calibration curve are estimates only.

I = indicates labeled standards have been interfered with on the GC column by coeluting, interferent peaks.

J = indicates a concentration based on an analyte to internal standard ration which is below the calibration curve. Values outside the calibration curve are estimates only.

PR = indicates that a GC peak is poorly resolved. The concentrations or amounts reported for such peaks are most likely overestimated.

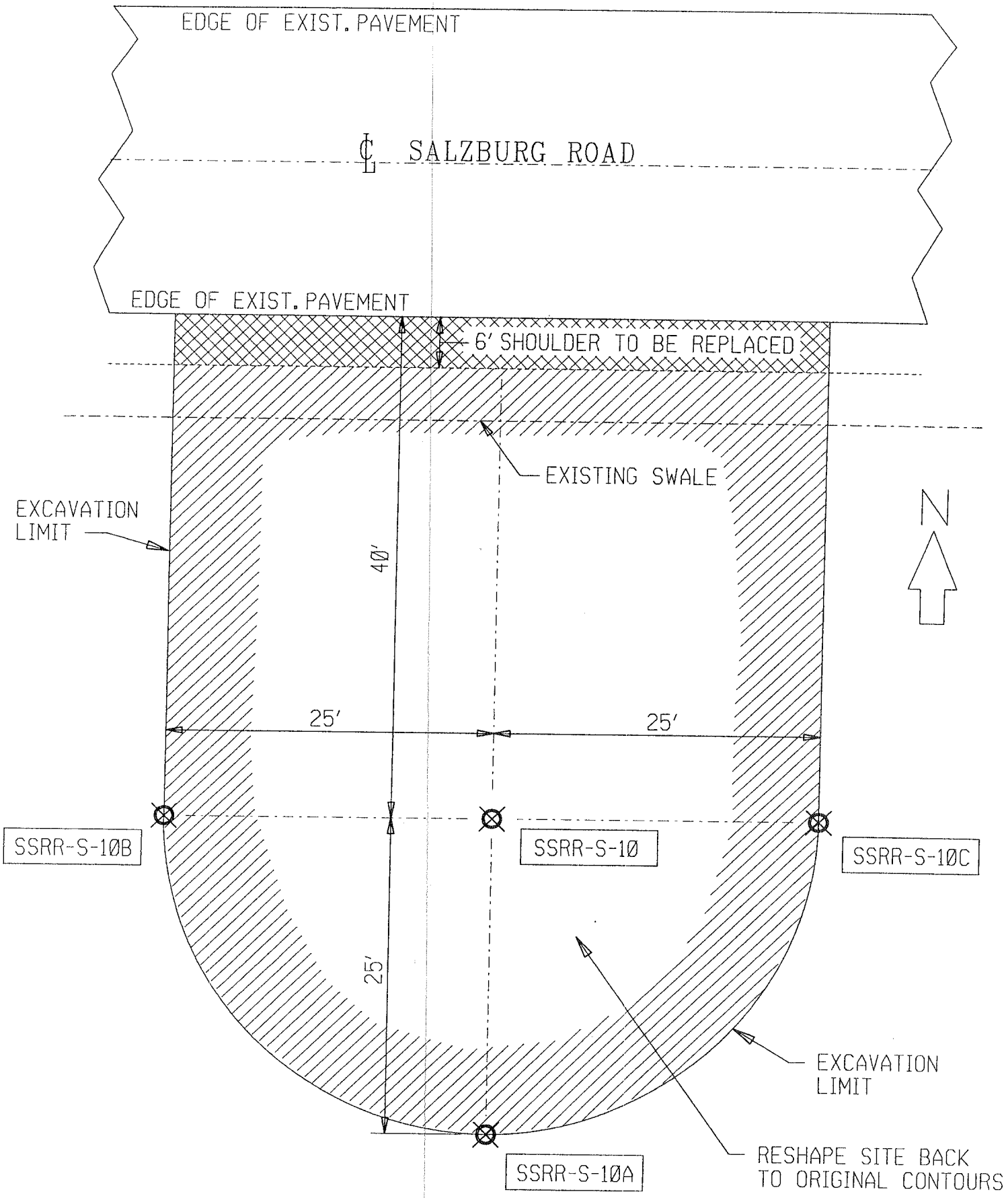
Q = indicates the presence of QC ion instabilities caused by quantitative interferences.

S = indicates that the response of a specific PCDD/PCDF isomer has exceeded the normal dynamic range of the mass spectrometer detection system. The corresponding signal is saturated and the reported analyte concentration is a 'minimum estimate'. Results for saturated analytes are reported as greater than the upper calibration limit.

U = indicates that a specific isomer cannot be resolved from a large, coleluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration cannot be determined. The calculated detection limit, therefore, should be considered an underestimated value.

V = indicates that, although the percent recovery of a labeled standard may be below a specific QC limit, the signal-to-noise ratio of the peak is greater than ten-to-one. The standard is considered reliably quantifiable. All quantitations derived from the standard are considered valid as well.

X = indicates that a polychlorodibenzofuran (PCDF) peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is at least ten percent of the total PCDF peak intensity. Total PCDF values are flagged "X" if the total DPE contribution to the total PCDF value is greater than ten percent.



* SSRR-S-10 (OCT. 2001)
COLLECTED FROM EXPOSED SUBGRADE

\DUST\Scott.DGN

LEG/SM 11-28-01

SALZBURG ROAD EXCAVATION SPECIFICATIONS

Project Description

An excavation has been selected to address soils adjacent to Salzburg Road approximately 0.6 miles east of Waldo Road or 1.45 miles east of Saginaw Road. The area is along the south portion of the Salzburg Road right of way and Dow Chemical property and is approximately 50 feet in diameter. Soils will be excavated to a depth of 0.5 feet and placed into tandem dump trucks. The material will then be transported to Dow Michigan Division and appropriately managed. The disturbed area will be backfilled with topsoil and gravel (shoulder) and seeded. The contractor shall adhere to procedures and specifications stipulated in the Midland County Road Commission permit.

Safety

The Contractor shall prepare a Safety Activity Plan addressing how the work will be completed in a safe manor both within Public right-of-way (ROW). As a minimum, the Contractor shall perform all work within Public ROW in accordance with Midland County requirements and the Michigan Manual of Uniform Traffic Control Devices (MMUTCD). Signage and traffic control within Public ROW shall be paid for on a time and material basis and include all labor, materials and equipment required to erect, maintain, relocate (if necessary) and remove all signage and traffic control devices.

Site Preparation

Site Preparation work shall be paid for on a time and material basis. There is a gas line that is within the working area. The Site Preparation activities shall include the following items:

- Miss Dig notification
- Verifying utilities

Soil Excavation

The soil shall be removed with an excavator to approximately six inches below level surface. The excavation should extend to the limit of Salzburg Road. The limit of the excavation will be marked in the field prior to commencement of the activities. As presented on the attached Figure, the approximate limit is 50 feet x 50 feet. The activity should commence near the northwest portion of the removal area and proceed southeast. Manifesting procedures will be completed during the transportation of the soil. Truck traffic on exposed subgrade should be avoided to eliminate track out. The removed topsoil should be direct loaded into a tandem dump truck. Access to the excavation is provided by an access road located approximately 200 feet due east of the planned excavation area.

Dust & Trackout Control Measures

The work shall be carried out in a manner that will minimize dust and trackout. The area shall be prepared by applying water to the excavation area. Dust and trackout control shall be managed by the Contractor at all times. Dust & Trackout Control Measures shall be paid for on a time and material basis.

Backfill

The existing Salzburg Road shoulder shall be reestablished with appropriate aggregate base per MDOT specifications. Topsoil shall be of the heavy, silty/clayey loam variety. Topsoil source(s) shall be approved prior to project commencement. Topsoil shall be tailgate dumped and spread from site boundaries and proceed inward. Topsoil shall be placed to a nominal 6-inch thickness. The topsoil shall be placed so the established site drainage patterns. The flow line of the drainage swale adjacent to Salzburg Road shall be reestablished. Topsoil shall be measured and paid for on a cubic yard (loose measure) basis. The price shall include all labor, material and equipment required to furnish and place a 6-inch layer of topsoil. Estimated quantity – 8 tons aggregate, 50 tons of topsoil.

Seeding

The disturbed areas shall be hydroseeded, fertilized, and mulched at the agreed greenbelt enhancement rate. The straw shall be "crimped" into the topsoil immediately after it has been placed. Estimated quantity – 5625 cubic feet.